DOCUMENT RESUME

ED 023 872 VT 006 719

By-Uxer, John E.

The Function and Status by 1980 of Vocational Education in the Thirteenth and Fourteenth Years, Work Project No. 14.

New Mexico Occupational Research and Development Coordinating Unit, Santa Fe.; New Mexico State Advisory Committee on Designing Education for the Future, Santa Fe.

Pub Date Jul 68

Note-61p.

EDRS Price MF-$0.50 HC-$3.15

Descriptors-*Area Vocational Schools, Curriculum, *Educational Trends, Enrollment Projections, Financial Support, Inservice Teacher Education, *Post Secondary Education, State Surveys, Student Enrollment, *Vocational Education, Vocational Education Teachers

To determine the function and status of post-secondary vocational education, a literature review and nine-state survey were used in projecting the post-secondary educational needs and trends in New Mexico for 1980. Data indicated: (1) Vocational schools had a mean beginning enrollment of 192 with a projected growth of 411 by 1966, (2) The average vocational school surveyed had been in operation 3.7 years and its enrollment had grown by 69.4 students per year, (3) 0.3 percent of the present total population was enrolled in area vocational schools, (4) The mean ninth through 12th grade enrollment in area vocational districts was 6,427, (5) The mean distance of the area vocational schools from the nearest similar institution was 61 miles, (6) Just under one-half of the area vocational school teachers had earned no degree, and (7) The median cost per student was $1,000. Projections to the year 1980 revealed: (1) three levels of vocational education instruction of pre-vocational, manipulative skill and sub-professional, (2) integration of pre-vocational education in secondary schools, (3) 95 percent of the population residing within 75 miles of area vocational schools offering manipulative skill and sub-professional instruction, (4) inservice training programs for upgrading of instructors, (5) broader scope of curricular offerings, and (6) financing at a higher level with federal funds. (DM)

c.1.

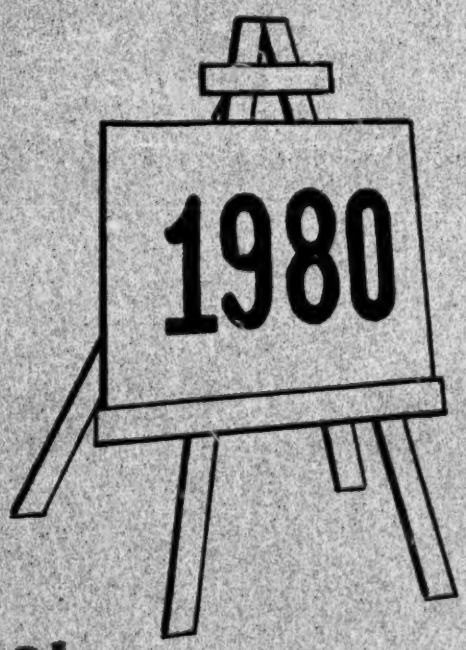
DESIGNING EDUCATION for the FUTURE

and

New Mexico

THE FUNCTIONS AND STATUS BY 1980 OF VOCATIONAL EDUCATION IN THE THIRTEENTH AND FOURTEENTH YEARS

Dr. John E. Uxer



WORK PROJECT NO. 14

Educational Program

RESEARCH COORDINATING UNIT

ED023872

VTC06719

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

THE FUNCTION AND STATUS BY 1980 OF VOCATIONAL EDUCATION IN THE THIRTEENTH AND FOURTEENTH YEARS.

By

DR. JOHN E. UXER.

JULY 1968

Prepared for the New Mexico Research Coordinating Unit
and the New Mexico State Advisory Committee
on
Designing Education for the Future.
Study Committee on Instructional Program and Staff Needs.

FORWARD

The purpose of this working paper is to stimulate thought and to provoke ideas concerning the subject under study. In no means does this indicate that all available research on this subject has been covered, nor is this paper to be considered an end in itself. The authors of this series of papers have been given considerable freedom to write in the fields of their expertise and/or their firsthand experience. The views, therefore, contained herein represent the opinions and interpretations of the specific author and are to be used in this light by the committee for Designing Education for the Future, and are not to be considered as opinions taken by anyone working on the project other than the author.

It is the sincere hope of the director that the various study and advisory committee members use these papers as a springboard to formulate the necessary program required by this project; therefore, feel free to add to, delete, or change in any manner your working copy of this paper; for, in the true sense, only then can it become a working paper and thereby fulfill the task for which it was prepared.

Thomas B. Bailey Jr.
New Mexico Project Director

THE FUNCTION AND STATUS BY 1980 OF VOCATIONAL EDUCATION IN THE THIRTEENTH AND FOURTEENTH YEARS

John E. Uxer

I. INTRODUCTION

Although the topic of this paper concerns Vocational Education at the thirteenth and fourteenth years, a few comments to help establish some foundation for discussion seem necessary.

The lack of a functional, universal definition of "vocational education" is most confusing -- to both educators and laymen. Laymen are probably less confused than educators because, to them, vocational education implies the development of some specific skill, e.g., bricklaying, radio repairing, automotive mechanics, or dress making -- depending upon the experiential background which determines the perceptions of each individual layman. Although it is somewhat difficult for a layman, whose perceptions include only a very narrow range of areas of training, to apply his definition of vocational education to other areas of training, he isn't bothered by occupational fields such as teaching, radio announcing, or medicine because to him these fields are clearly non-vocational.

On the other hand, educators consider a much broader range of occupational fields as vocational. Depending again upon his perceptions, the educator establishes definitions of vocational education which range

from the teaching of simple manual skills to the operation of the cyclotron.

Obviously, a vocational program must be defined before appreciable progress can be achieved in its development. One possible solution, of course, is to define and establish the parameters of each vocational program in terms of the philosophy, goals, and objectives of a specific program. This procedure may be expedient for a given program but hardly satisfies the need for a more universal approach to the problem.

Another perplexing problem in developing vocational programs concerns the scope of "general education" which should be associated with vocational education. The accepted purpose of vocational education is to teach marketable skills. Yet, employers are increasingly demanding competence in not only a specific skill but also in the ability to communicate effectively, to perform certain calculations, and to be able to relate well with fellow workers and members of the community. These concomitant skills form the heart of the <u>general education</u> program.

Keeping these basic and varied needs in mind it is easy to visualize the evolutionary process which could change a thirteenth and fourteenth year vocational school -- initiated to teach specific vocational skills -- into a comprehensive junior college or an extension of a high school. For example, in one area, the initial vocational course may have been to teach welding as a marketable skill. In order for the prospective welder to meet the demands of an employer-- say an aircraft manufacturer -- he must be able to identify different

metals, determine needs for gas assistance, and calculate heat requirements, all of which require some knowledge of chemistry, physics, and mathematics. Further, he must be able to read blueprints, understand written safety standards, and relate well with his supervisor and fellow workers. Multiply these instructional needs by the myriad needs of a multidimensional vocational program and the general education demands of a vocational school may very well overshadow the incipient purpose of the school.

A third major problem in establishing post high school vocational education programs concerns standards for the determination of teacher qualifications and salary levels.

The employability of a vocational school graduate depends to a large extent upon the confidence the employer has in the teacher of a desired skill. As a general rule the employer demands that the skill be taught by an instructor who possesses a high level of expertise in that particular skill. The source of such personnel is usually from the ranks of practitioners. When personnel from this source are secured, two problems are typically encountered: 1) the prospective instructor's salary as an outstanding practitioner is usually higher than other instructor's salaries; and 2) the practitioner, though highly skilled, probably has had no training in imparting that knowledge in a planned, systematic manner.

II. BACKGROUND FOR VOCATIONAL SCHOOL ORGANIZATION

Although prior to 1917 several provisions had been made for federal aid for educational programs, primarily under the direction of institutions of higher education, the Smith-Hughes Act of that year

was the first Act providing appreciable support for vocational programs.

Whereas many provisions for federal aid to education are directly related to national defense, the national program for vocational education was established as a peacetime measure to assist and stimulate a growing economy.[1] A cooperative endeavor between the federal government and the states was initiated only after intensive consideration and investigation by Congress. A Commission on National Aid to Vocational Education was created by Congress in 1914. A report of the findings of their Commission led to the enactment of the Smith-Hughes Act in 1917.[2]

Congress subsequently passed several acts to further develop vocational education. The George-Reed Act of 1929, the George-Ellzey Act of 1934, and the George-Deen Act of 1936 was successively superceded, eventually culminating in the George-Barden Act of 1945. Benefits of the Smith-Hughes Act were extended to Puerto Rico in 1931. The George-Barden Act was amended to include the Virgin Islands in 1950 and Guam in 1956. Additionally, the Eighty-Fourth Congress amended the George-Barden Act authorizing an annual grant, for four years, for area vocational programs.

Under the provisions of the Smith-Hughes Act and subsequent Acts extending these provisions, a number of comprehensive programs of

---

[1] United States Department of Health, Education, and Welfare, Office of Education, Vocational Education in the Next Decade (Washington: Government Printing Office, 1961), p.9.

[2] Ibid.

vocational education have been developed.[3] Although much was accomplished, the need for broader support was evident and the Vocational Act of 1963 was enacted to help satisfy this need. One section of this Act specifically provides for the formation and operation of area vocational schools.

As vocational education emerges in American education and as it gains momentum, five questions presented by Norman Harris need to be resolved. These questions are:

1. Where, within the economy and within the occupational structure, are the jobs?
2. What are the entry jobs for youth and what age limitations are placed on them?
3. Is apprenticeship a bridge between school and work, or is it a barrier between youth and jobs?
4. What does the technological revolution tell us about education and training requirements?
5. Where should occupational education be offered--in special schools, or in the mainstream of American education?[4]

Most Vocational programs have been located in high school settings; however, there is a question as to their appropriate location. A current popular belief that most vocational programs belong in a post-high school setting was expressed in the Sixty-Fourth Yearbook, Vocational Education,

---

[3]Roy W. Roberts, Vocational and Practical Arts Education (New York: Harper and Row Publishers, 1963), p. 131.

[4]Norman C. Harris, "Redoubled Efforts and Dimly Seen Goals," Phi Delta Kappan, Volume 64 (April, 1965), p. 361.

published by the National Society for the Study of Education. The chairman of the committee made this statement in the concluding chapter, "One would say that the future of vocational education belongs to the post-high school institution."[5]

Review of the programs in existence and those planned in other states indicates that most terminal-type vocational education is being conducted at the post-high school level although many states have developed cooperative programs with vocational schools in order to accommodate appropriate high school students. The descriptions of programs for selected states will identify and establish relevance of factors or variables, to area vocational school location.

Colorado. A survey of course enrollments in Colorado's junior colleges shows that less than twenty per cent of the students were enrolled in the vocational-technical curriculum, although one of the primary functions of the junior college is to provide training for employment upon completion of the program. The Colorado State Department of Education conducted a feasibility study of possible locations of area vocational schools in the State and designated fourteen area vocational school districts. These area vocational school districts vary in size from 16,335 square miles for the district in the northwest corner of Colorado to an area just large enough to include Denver in central Colorado. The high school enrollments in grades ten, eleven, and

---

[5]Melvin L. Barlow, A Platform for Vocational Education in the Future (Vocational Education, 64th Yearbook, Part I, National Society for the Study of Education, Chicago: University of Chicago Press, 1965), p. 287.

twelve in these districts vary from 1,371 to 19,154, and the district assessed valuations range from $69,000,000 in area district number thirteen in south central Colorado to $1,150,000,000 in the Denver area.

There seems to have been no direct attempt made to determine the relative significance of various factors in the establishment of area vocational schools.[6]

Georgia. A system of twenty-nine state and area vocational-technical schools is being developed in Georgia. By September, 1963, twelve area vocational-technical schools and two state vocational-technical schools were in operation. Of the fifteen additional area schools which have been approved by the State Board of Education, four were under construction by the end of 1963.[7]

In locating and establishing these area vocational-technical schools, the Georgia State Board of Education applied twelve criteria, although the relative importance of the criteria was not determined. The criteria used by the Georgia State Board of Education were:

1. The attendance area must contain not less than 60,000 in total population.

2. A radius of approximately thirty miles shall be considered the attendance area for an area vocational school. One-half the distance between two locations of less than thirty miles shall be considered as the attendance area.

---

[6]State Board for Vocational Education, Area Schools (Denver: State Board for Vocational Education, 1966).

[7]United States Office of Education, Vocational and Technical Education: A Review of Activities in Federally Aided Program, Fiscal Year 1963 (Washington: Government Printing Office, 1964), p. 25.

3. The combined enrollment of high school grades nine through twelve in the attendance area shall be not less than 3,000.

4. No more than one school shall be constructed in any approved location.

5. Schools must be located in centers where there is a large and growing population, never in an area where the population is decreasing.

6. Schools shall be located where there is a concentration or expansion of industry.

7. Local school systems must provide a site of not less than ten acres, and 50 per cent of the cost of architectural fees, construction and equipment costs.

8. Local school systems within the attendance areas must have ongoing programs in the vocational areas as a nucleus to build a complete area vocational-technical program.

9. The local school system must make an official commitment to provide maintenance and operation of the building.

10. Local school systems cannot charge students a tuition fee.

11. The school shall provide a minimum of eight training areas.

12. Instructional programs shall be designed for occupational competency leading to immediate employment, but not leading to a baccalaureate degree.[8]

Idaho. A philosophy has been developed in Idaho, stating that broad-range vocational education classes should be available to all residents in the State. Experience with the vocational programs in Idaho suggests that the success of area vocational schools depends, to a great extent, upon the location of the school. Also, if the maximum

---

[8]Georgia State Department of Education, Criteria for Approval of Locations for Area Vocational-Technical Schools (Atlanta: State Department of Education, undated), p. 1.

number of persons are to derive the maximum benefit from dollars spent, the programs must be located in areas of high population density. Idaho's experience has also shown that the greater percentage of those attending area vocational education schools live within fifty to seventy-five miles of the school.

Although Idaho statutes allow area vocational schools to be associated with a college or university or to be established as an independent state-operated school, the Idaho State Board for Vocational Education has ruled that, insofar as possible, area vocational education schools in Idaho should be associated with a junior college or state educational institution. This action resulted from the belief that area schools associated with a college or university have distinct advantages for students since those who desire may avail themselves of academic courses offered by the school during the evening or other hours outside scheduled vocational education classes.

The average total population per area vocational school district was 111,199 ranging from 74,749 persons in the North Central area to 212,371 persons in the Southwestern area. High school enrollment per area vocational school district averaged 6,174. The North Central area had the least number of high school students with 3,590. The largest enrollment, 11,175, occurred in the Southwestern area.

In Idaho, state-owned and operated area vocational schools are either administered by existing state institutions or operate independently. In area schools administered by existing institutions, the State Board for Vocational Education reimburses 100 per cent of building, instructional costs, equipment, supplies, maintenance of vocational

equipment, and administration and supervision directly related to the vocational program. All costs of operation of a state-owned and operated independent area vocational school are supplied by the State Board for Vocational Education.

The State also participates in the support of area vocational schools operating under the jurisdiction of local boards. State Board participation in the construction of area vocational school facilities at public education institutions which operate under the jurisdiction of a local board is limited to fifty per cent. State Board participation is contingent upon a written agreement between the local board and the Idaho State Board for Vocational Education stipulating that the buildings constructed through the use of public vocational funds will be used in accordance with specified policies and the provisions of the Vocational Education Act of 1963, and/or subsequent legislation and that there will be no reduction of present usable facilities.

Proposals for the establishment of area vocational schools in Idaho must contain assurance that the following criteria can be satisfactorily achieved:

1. There must be reasonable documented assurance that the employment opportunities will exist for the graduates in the community, the State or elsewhere, in the occupation or occupations for which training is given.

2. There must be reasonable assurance of initial and continuing enrollment for the proposed programs and that enrollment practices will give consideration to the intention of the student to enter employment in the occupation or occupations for which training is given, and to the ability of the student to profit from the instruction as determined by adequate testing and guidance.

3. The school must seek out and use the advice and counsel of persons who are representative of the industry or occupation for which training is given.

4. The proposed instructional program must be based upon an analysis of the occupation for which training is given.

5. Time allowance for the proposed vocational education program must be sufficient to attain the objectives for the program as determined by an occupational analysis.

6. Adequate initial facilities and equipment must be available for the total proposed program or plans give evidence that the equipment and facilities will be supplemented according to a reasonable schedule.

7. There must be reasonable assurance that the administrative, supervisory, and instructional staff will be adequate in both quantity and quality and that the policies of the school are conducive to the development and maintenance of the proposed program.

8. The cost of the proposed vocational education program must be realistic in light of training to be offered and the number of students to be reached.

9. There must be assurance from the school that such records and reports of program operation, as are required by the State Board, will be submitted to the State Board within designated time limits.[9]

Kansas. Prior to the passage of a Vocational-Technical Act, introduced as Senate Bill Number 438, in 1963, most of the vocational education in Kansas secondary schools was centered around about two hundred programs of vocational agriculture located primarily in the smaller communities of the State.[10] Following the passage of this Act,

---

[9]State Board for Vocational Education, Area Vocational Education Schools in Idaho (Boise: State Board for Vocational Education, undated).

[10]Statement made by John W. Lacey, Former State Supervisor of Area Vocational-Technical Schools in Kansas at Las Cruces, New Mexico, January, 1965.

the State Board for Vocational Education began the establishment of a State system of area vocational-technical schools.[11]

The Bill provided for two methods of administrative organization. The board of control of any area vocational-technical school could be the board of the school district in which the school was to be located, or, the alternative method, a board consisting of one or more representatives from each of the boards of the cooperating districts subject to the approval of the state superintendent of public instruction. The second method proved most acceptable in those cases where the vocational school was supported with tax levies from cooperating districts.[12]

The Bill empowers the local school districts to levy two mills in support of an area vocational school subject to the vote of the patrons at the annual school meeting. Enrollment fees were to be established by the governing body of the area school and charged for persons coming from cooperating districts against the two mill levy until this levy was used up and then an additional charge would be made to the school district.[13]

Senate Bill Number 438 of the 1963 session of the Legislature of the State of Kansas, in establishing the criteria for the location and establishment of area vocational-technical schools, outlined a minimum

---

[11] Ibid.

[12] Ibid.

[13] Ibid.

of eight factors which must be considered:

1. Concentration of population within a reasonable community service area.

2. Total school enrollments in grades one through eight, and in grades nine through twelve, separately.

3. Number of high school graduates within the area to be served.

4. Probability of sustained growth in school enrollments within such area.

5. Identification of educational services needed within the area.

6. Local interest and attitudes toward the program within the area.

7. Ability of the area to contribute to the financial support of the program.

8. Consideration of the area in relation to other requests for programs of vocational-technical training to prevent over-lapping or duplication of educational services.[14]

In a statement of policies and principles pertaining to the establishment of area vocational-technical schools under the provisions of Senate Bill Number 438, the Kansas Board for Vocational Education said that, with the possible exception of the Kansas City and Wichita school districts, each request for an area school should represent the cooperative endeavor of a sufficient number of school boards to assure a large enough unit to appropriately contribute to a state system of vocational-technical schools. Not more than twenty such schools, which will most equitably serve all youth and adults of the State as a whole, should be established.[15]

---

[14]Senate Bill Number 438, State of Kansas, June, 1963.

[15]State Board for Vocational Education, Statement of General Policies and Principles (Topeka, Kansas: State Department of Vocational Education, 1963), p. 1.

The policies of the Kansas Vocational Education Board also state that each request for an approvable area school should show evidence of a continuing need of fifteen or more persons to be trained each year in a minimum of five skilled occupational areas served by the curricula.[16]

Although Senate Bill Number 438 provided eight criteria for the location and establishment of area vocational schools, the State Board for Vocational Education established three basic criteria for use in this determination. The first criterion concerned the geographic areas. The Board decided that with the exception of two or three larger urban communities, no application would be considered which did not include a geographic area of more than one county. Population density regulated the required number of participating counties. The second major consideration was the size of the tax base of the area to be served. The Board assumed that federal legislation would provide a portion of the necessary assistance for the vocational schools in their programs. The Board also assumed that local communities would have to provide about fifty per cent of the cost. Therefore, a tax base large enough to yield a considerable amount of money would have to be considered in location decisions. The third basic criterion was the population represented by the potential area.[17]

---

[16] Ibid.

[17] Lacy, loc.cit.

Although the foregoing criteria were used in determining area vocational school location, in no case was the size of the geographic area or the minimum tax base or the total population specifically defined. Further, no effort was made to determine the relative significance of the factors.[18]

During the twelve months following the passage of Senate Bill 438, eight schools were approved as area vocational-technical schools, seven of which began operation on September 1, 1964; the eight began operation some several months later. Two additional locations were approved in 1965 and began operation that fall.[19]

Montana. Montana vocational education officials are, at the present time, studying the development of area vocational schools in that State. They state that Montana is somewhat unique in that they have an average of five persons per square mile and a population of only 730,000 people.

According to a report by an official of the State Department of Public Instruction, they, at the present time, have not developed criteria based on either population or assessed valuation for the establishment of area vocational schools. This official stated that they are very much interested in the possibility of applying the model

---

[18] Ibid.

[19] Division of Vocational and Technical Education, Bureau of Adult and Vocational Education, United States Department of Health, Education, and Welfare, Summary Report of Vocational-Technical Program Development by States (Washington: Government Printing Office, 1965), p. 14.

developed through the present study to the State of Montana.[20]

North Dakota. The North Dakota State Board for Vocational Education is completing a manpower study of training and retraining needs in North Dakota. This study also includes such factors as trends in population and the need for a system of area vocational schools. At the present time there is only one vocational-technical school in North Dakota which is located in the extreme southeastern part of the state. This State is contemplating the establishment of a system of area vocational schools based upon their study. The North Dakota Research Coordinating Unit, in cooperation with the State Board for Vocational Education, will determine the curricula for the advancement of area vocational schools. At the time of this writing, this document was still some three to four months away. Therefore, it cannot be summarized in this study.[21]

Oklahoma. Joint Resolution Number 520 was adopted by the Oklahoma Senate on July 14, 1965, and the House of Representatives passed the Resolution on July 15, 1965, to refer to the people of Oklahoma for their approval or rejection a constitutional amendment to provide for vocational and technical education in the State of Oklahoma.

This Resolution, which was passed by the citizenry of Oklahoma,

---

[20]Personal Correspondence of the Investigator, letter from Max H. Amberson, October 11, 1966.

[21]Personal Correspondence of the Investigator, letter from Leroy H. Swenson, Director of Vocational Education, October 14, 1966.

provides for a levy not to exceed five mills on the dollar valuation of taxable property in any area school district to establish an area vocational school. Also, upon the establishment of an area vocational school district, such districts are authorized to become indebted separate and apart from the indebtedness of any school district included in the area district up to 5 per cent of the net valuation of taxable property within such area school district for capital improvements including purchasing sites, constructing, purchasing, improving and equipping real property and buildings when such indebtedness is approved by the majority of the electors of the area school district.

Upon passage of this Resolution by the people of Oklahoma, the State Board for Vocational Education established the following minimum criteria for approval of area vocational school districts:

1. The proposed area school district shall have a total minimum scholastic population of 15,000 or serve a fifty-mile radius from the proposed site of the school.

2. The proposed area school district shall have a minimum net assessed valuation of $40,000,000 after homestead exemptions.

3. An application shall be prepared which provides a complete picture of the proposed district in regard to size, population, assessed valuation, current school enrollments, including secondary school and elementary enrollments, adult enrollments, employment opportunities and other information relating to a justification of a school.

The plan, approved by the State Board for Vocational Education, for formation of area school districts, provides that the State Board for Vocational Education shall make a study of a particular area of the State on request of school districts as indicated by resolutions signed by the boards of education representing school districts in the

proposed area. An election on area participation shall be conducted in each separate district in a manner prescribed by the State Board and if the election results are favorable they shall be held as valid by the State Board for a period of twelve months.

Should a district present unfavorable results, they could again, by resolutions, request another election in no less than three months. The State Board may then form and designate the area school districts for vocational and/or technical education from the school districts who voted in favor of becoming a part of the vocational school district.

If the boundaries of an area school district are the same as those of an existing school district, the board of education of the existing school district shall serve as the school board of the entire area school district. If the boundaries of an area school district are not the same as those of an existing school district, the State Board for Vocational Education, through its designated representatives, shall conduct an election to provide for the governing board of the designated area school district. Five board members shall be elected for each district. However, the State Board for Vocational Education shall divide the district into four zones of approximately equal population and the election shall be conducted by the said board through its designated representatives. Four board members shall be elected, one from each of the four zones, and one member shall be elected at large and may be a resident of any one of the four zones. Board members shall be elected for five-year staggered terms. Territory may be annexed to or detached from an area school district at any subsequent time by the State Board for Vocational Education after the approval at an election called and held for such purpose by the State Board for Vocational Education.

Tuition may be charged for nonresident students enrolling in vocational and/or technical school education courses, but shall be subject to approval by the State Board for Vocational Education. An area school may operate a transportation system which shall also be approved by the State Board for Vocational Education.

Area school districts shall operate under and according to the existing school laws of Oklahoma unless otherwise provided by the State Board for Vocational Education. According to Oklahoma policy, the area vocational-technical school should provide training programs for high school students, post-high school students and adults. High school students may attend the vocational school a half-day and their own school a half-day. They receive credit for attendance at the vocational school and this credit applies toward a high school diploma issued by the home school. The area school could provide post-high school training on either a full-time or evening class basis. Part-time programs should be available for adults who are already employed. Short, comprehensive training programs should be organized to meet any training need that might be developed in the area served by the school. The area vocational-technical school in Oklahoma is one which shall serve a thirty to fifty mile radius depending upon the population of the area.

Under the terms of an amendment as it is presently written, area vocational schools cannot serve as community junior colleges. However, it is the prerogative of the Legislature to change this law in the event this should become feasible. Since the passage of this

resolution, five area vocational schools have been established in Oklahoma.[22]

Oregon: In Oregon, area vocational-technical education is accomplished through a network of community colleges. Since community college programs involving college level academic course are within the same organization offering vocational-technical courses, the establishment of these institutions differs somewhat from the establishment of area vocational schools. The Oregon law under which community colleges are established defines an area education district as an area that includes more than one school district.

The procedure for establishing a community college includes the filing of a locally initiated and signed petition proposing such a district with the State Board. The State Board conducts a hearing on the petition and, if approved, submits the petition to the registered voters residing within the boundaries of the proposed district.[23]

Under Oregon State Law the following criteria for the establishment of an education center or a community college are prescribed. These criteria apply equally to an area district or to a school district wishing to establish an education center or community college:

1. The residents of the geographical area concerned are not, in the opinion of the State Board, adequately served by an

---

[22]State Board for Vocational Education, Area Vocational-Technical Schools: A New Program Concept for Oklahoma (Stillwater: State Department of Vocational Education, undated).

[23]State Board of Education, Oregon Community Colleges: Annual Report (Salem, Oregon: State Department of Education, 1965), p. 6.

existing education center or community college or private school.

2. The enrollment in grades nine through twelve is at least 1,500 pupils in an area education district or the geographic area to be served by a school district.

3. Available building space is adequate for the courses to be opened.[24]

Additionally, the Board of Education of any school district not located within an area education district and not already conducting a program under the community college law may contract with the State Board of Higher Education, acting through the General Extension Division, for the holding of lower division collegiate classes or may contract with the State Department of Education for the holding of post-high school vocational courses. The Law also requires the Department of Education and the Division of Continuing Education to establish procedures to assure that duplication of classes does not occur.[25]

Apportionments for operating expenses and building construction are prescribed by state law. A district board applying for funds for capital construction must submit to the State Board a long-range plan for the development of the center or college, evidence that the district will provide a suitable site, evidence of the ability of the district to finance costs in excess of the amount of state funds for which the district is eligible, a general description of the proposed project, and such other information the State Board shall require. The

---

[24] Ibid.

[25] Ibid.

State Board of Education shall submit the project application to the Emergency Board if the State Board is satisfied that the district has provided adequate evidence of the criteria defined. The State Board shall, upon approval of the application, determine priorities in the allocation of funds.[26]

Utah. In Utah, post-high school educational opportunity and vocational education is approached somewhat differently than many other states. In Utah the school districts are eligible to receive state and federal fund reimbursements when they conduct programs which meet the standards of their State plan. All vocational programs conducted in Utah's public schools have the approval of the State Board for Vocational Education.

Trade-technical institutes, junior colleges, colleges, and universities which receive state appropriations from the State Legislature are also eligible to receive state and federal vocational education reimbursements administered by the State Board for Vocational Education providing they meet the policies and standards enumerated in the State plan and obtain the approval of the State Board.

Public trade-technical institutes and other post-high school area vocational schools approved by the State Board for Vocational Education have the primary responsibility for conducting extension and part-time industrial vocational education within enrollee commuting distance of each school. School districts within this area are also encouraged to conduct this type of post-high school vocational education. School districts beyond commuting distance have the primary responsibility for conducting

---

[26] Ibid.

such vocational programs. The State Administrator for Vocational-Technical Education has the responsibility for coordinating extension and part-time programs in industrial vocational education with the assistance of the state vocational specialists and area school representatives in these fields, together with the district directors of vocational education.

Post-high school extension and part-time courses in agricultural education, industrial arts, homemaking education, office education, distributive education, and semiskilled job training are primarily the responsibility of school districts. Area vocational schools are also encouraged to conduct such programs. Where school districts within commuting distance of a trade-technical institute or junior college do not desire to conduct these programs, they notify the state specialists in these respective fields to this effect. After counseling with the State Administrator of Vocational-Technical Education, contact will be made with the trade-technical institute or junior college concerned where it will be encouraged to conduct such programs.

The State Administrator of Vocational-Technical Education shall have the responsibility for coordinating all vocational programs conducted in area vocational schools with state specialists of the various sections of the vocational division and the administrators of the schools concerned.

Vocational reimbursements from the State Department of Public Instruction to trade-technical institutes, junior colleges and universities are made for vocational and technical training conducted only at these educational institutions or in private establishments within

enrollee commuting distance of these schools in which the training is conducted by area vocational schools. Vocational reimbursements to school districts from the State Department of Public Instruction are for vocational training programs conducted in the districts under the administration and general supervision of district superintendents of schools.

High schools in Utah are encouraged by the State Department of Education to offer vocational courses as a part of the education program. Programs in each vocational field in Utah consist of five to seven year-long courses arranged in sequence during the tenth, eleventh and twelfth years.

Summer programs for high school students in vocational education (vocational aides, vocational business and distributive education, vocational home economics, trades and industries and vocational agriculture) are regarded as an extension of school-year programs. They are designed to either supplement or to be an integral part of courses taught during the school year. In no case shall a student in the tenth, eleventh, and twelfth grades be registered for summer vocational courses who is not registered for such programs during the school year immediately preceding or succeeding the summer in which they are provided. Vocational courses which are conducted in the summer must be of sufficient length so that they may be equated on a semester or school-year basis when this credit is evaluated in high schools.

In Utah school districts, area vocational schools, trade-technical institutes, colleges, and universities are encouraged to provide inservice training for homemakers, semiskilled, skilled, and technician workers

in keeping with approved standards for facilities and instructors and in terms of the needs of the workers.[27]

Wisconsin. A somewhat more rigid program of vocational education has developed in Wisconsin than in most other states. In order to qualify to become a district in Wisconsin by July 1, 1970, a district must satisfy minimum state standards in terms of students available for full-time and part-time instruction. Also, the potential district must have a basic equalized value which, along with state and federal aids, will support a quality educational program which is in line with the policies enacted by the State Board for Vocational-Technical and Adult Education and the Coordinating Committee for Higher Education.

Several decisions made by these two bodies strongly affect area vocational school development in Wisconsin. The most important of these decisions are summarized as follows:

First, there must be at least one major educational unit in each district created which would offer all programs (including transfer education where permissible by law) and there must be centers or satellite schools to offer locally oriented day and evening programs. Also, evening programs must be extended to all communities in the district where there is a sufficient number of students to warrant the initiation of classes. It is the attempt in creating area organization to make maximum utilization to the staff of the central unit in providing service to the satelite schools.

---

[27]State Board for Vocational Education, Policies on Relationships in Vocational Education Between Post High School Educational Institutions and School Districts in Utah (Salt Lake City: State Department of Vocational Education, 1965).

The second decision made by the State Board for Vocational-Technical and Adult Education and the Coordinating Committee for Higher Education is that associate degree programs must be expanded and that the quality must be sustained at a high level. The courses must be transferable where practical and an option of course-choice within the curriculum must exist.

A third decision states that, "full-time certificate programs must be expanded, and insofar as possible the courses within a vocational curriculum should be transferable to the associate degree level if a student makes satisfactory progress."

Based upon these actions of the State Board for Vocational-Technical and Adult Education and the Coordinating Committee for Higher Education, the following assumptions were adopted for formulating criteria for the location of area vocational schools:

1. Most of the wider choice will come in the area of general education.

2. There are at least five major areas of general education including English, Social Science, Psychology, Mathematics, and Science.

3. The vocational-technical school is dealing with full-time post-high school students both in the vocational and technical program.

4. An average of twenty students must be enrolled in a class.

5. These should be offered at least two different times during the course of the week which would produce a minimum enrollment of 920 full-time student equivalents.

6. A district must generate 3,800 high school graduates in the 1970's and through the 1980's in order to produce sufficient full-time equivalent students in vocational-technical education programs. This assumption is based upon the results of a survey which indicates that the rate of technical-vocational school attendance by high school graduates at present is approximately

twelve per cent.[28] This report indicates that the rate has been increasing at approximately 1.5 per cent a year so that in 1970, eighteen per cent can be expected to be enrolled in full-time programs. On this basis, then, eighteen per cent of 3,800 graduates would produce 684 full-time students. However, it is assumed that each district can generate at least 235 students who would be continuing work from the previous year.[29]

7. The total population of 237,500 would be required to generate 3,800 high school graduates (graduating classes represent approximately 1.6 per cent of the total population).

8. An eighth assumption concerns part-time students. Wisconsin officials state that they cannot predict with any accuracy the number of part-time students which varies from 3.9 per cent to 10.0 per cent of the total population in a given community. On this basis, a district of 237,500 would produce between 9,262 and 11,875 students. Another method of predicting part-time enrollment in Wisconsin is comparing present full-time enrollment with part-time enrollment. In 1966, about eleven times more part-time than full-time students were enrolled. Using this estimate approximately 10,120 part-time students would be enrolled in 1970.

It is estimated that the cost per full-time student enrolled at a vocational-technical institute in Wisconsin will vary from $1,100 to $1,250 in 1970. On this basis, the cost of 920 full-time student enrollments would range between $1,012,000 and $1,150,000. For part-time student enrollment it is estimated that a cost ranging between $606,000 and $525,000 would be incurred. The total instructional cost, then, is estimated to range between $1,518,000 and $1,725,000 for a typical area vocational-technical school district.

---

[28] Wisconsin Survey Research Laboratory, Educational Reactions of the 1964 Graduates of Wisconsin High Schools (Madison: Survey Research Laboratory, 1965).

[29] Ibid.

Wisconsin officials indicate that federal and state aids would supply approximately fifty-four per cent of the total operating costs, leaving approximately twenty-nine per cent to be funded from local tax revenue and approximately seventeen per cent to be funded from fees and tuition and other receipts. The facilities to accommodate 920 full-time students would require an outlay ranging from $1,840,000 to $2,760,000. This estimate is based on a construction cost of $2,000 to $3,000 per student suggested by the President's panel of consultants for vocational education. Since these criteria are going to be operational in 1970, interim criteria are being used at the present time.

Provisional districts may be approved utilizing the following interim criteria:

1. Each district must contain a central facility enrolling at least 500 full-time day students at the time of approval of application. The district's central facility must demonstrate the potential of reaching 920 full-time day students by 1970.

2. Each district must demonstrate that it can attain an equalized valuation of between $269,685,000 and $324,487,000 by July 1, 1970.

3. The proposed district plan must not conflict with the statewide master plan.

III. A MODEL FOR VOCATIONAL SCHOOL DEVELOPMENT

A decision model for the development of area vocational schools was constructed by the writer from the factors from a survey personally accomplished in ninety-four vocational programs in fourteen states. The model is outlined in Figure 1.

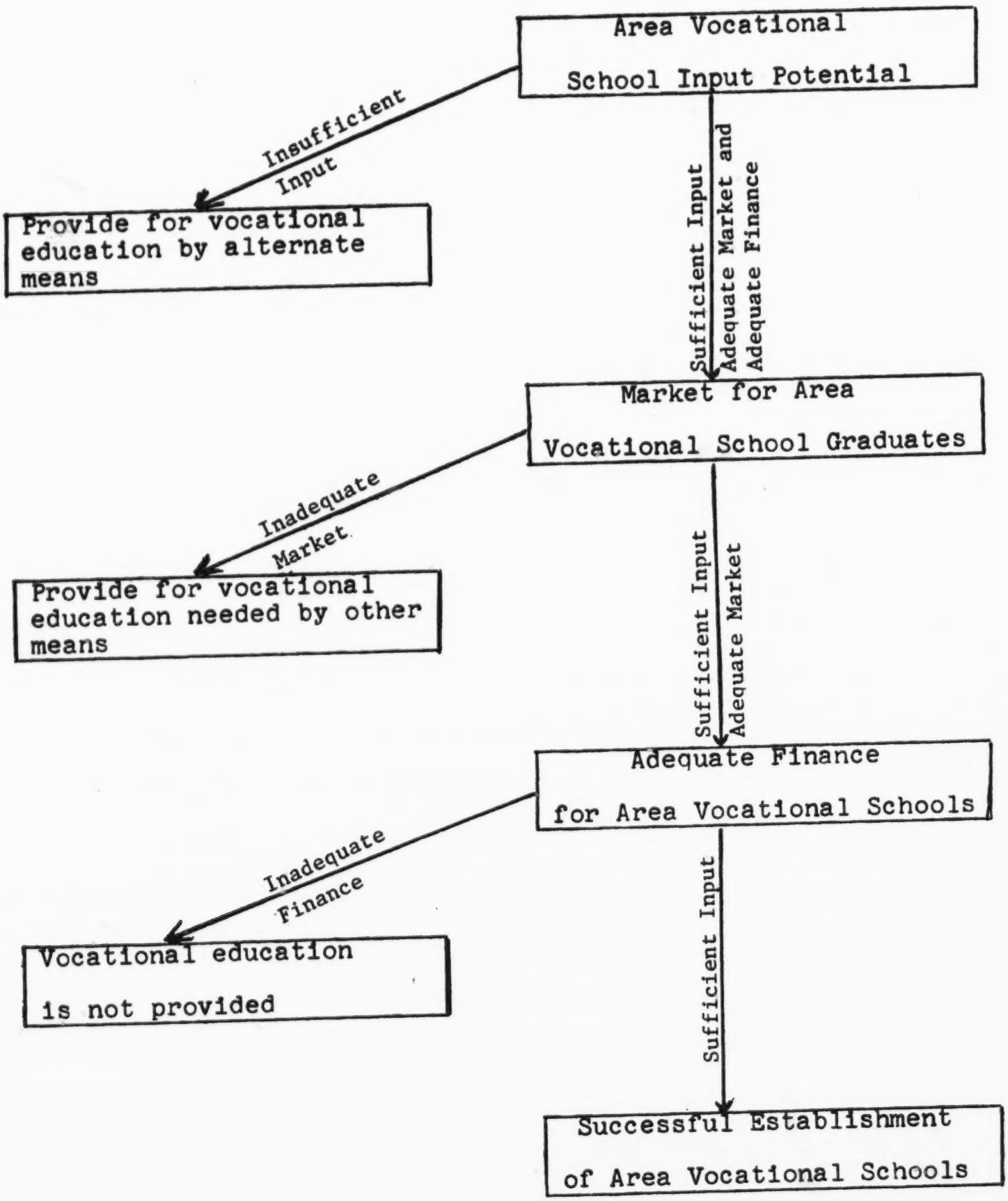


FIGURE 1

MODEL FOR LOCATING AND ESTABLISHING AREA VOCATIONAL SCHOOLS

There are three major characteristics of the model, namely, potential input or enrollment in the school's program, existing job opportunities for graduates, and adequate financial support.

Potential input, or enrollment, in the school is influenced by a number of demographic characteristics of the district in which it is located such as population, public school enrollments and available job opportunities.

Market for graduates, or job opportunities for graduates, is influenced by the overall labor situation at the national, state, and local levels. Also, placement of graduates appears to be affected by the quality of the instructional staff.

Finally, financial support is provided from federal, state, and local sources and from tuition.

In order to predict whether or not a district could successfully support a vocational school, it is first necessary to relate each of the variables included in the prediction model to the degree of success of existing area vocational programs.

The model to be developed provides a method for combining the relative contributions of each variable to the prediction of the overall success of a school. While it is unlikely that any one district will possess all of the ideal characteristics for a successful program, in many instances, those which it does possess will provide an adequate basis to predict the relative success of an area vocational school, if it were established in that district.

The first step in evaluating the first major factor--input potential--is the determination of the necessary initial enrollment if a new area vocational school is to be successful.

Data in Tables I and II indicate that the schools surveyed tend to have a small beginning enrollment ranging from sixteen to 1,387 students with a mean enrollment of 192. In 1966 these same schools range in size from fifty-eight to 2,300 students with an average enrollment of 411.

The data also indicate that fifty per cent of the area vocational schools, in their first year of operation, enrolled between fifty-one and 150 students while only four schools, or five per cent, enrolled over 500. Fifty-three per cent of the area vocational schools have enrollments in 1966 of 101 to 400 students.

The potential area vocational school enrollment, or input, is determined by a number of factors. Some of these factors, such as the image of vocational education in the community and unexpected industrial location in the area or unexpected discontinuation of a large business or industry in the area, are generally not subject to quantification. Other factors, however, are identifiable and can be evaluated quantitatively. A graphic illustration of the factors considered in the study are shown in Figure 2.

The questionnaire responses indicate that the average vocational school surveyed has been in operation 3.7 years and its enrollment has grown by 69.43 students per year.

Shown in Table III are the mean, median, largest, and smallest number of people accommodated in an area vocational school district. Those schools which are considered statewide schools and which accommodate students on a statewide basis have been excluded from Table III. The data indicate that the smallest area population in which an area

TABLE I

PRESENT AND FIRST YEAR ENROLLMENT IN AREA VOCATIONAL SCHOOLS IN STATES SURVEYED

Number of Students	1966		In First Year of Operation	
	Number of schools	Distribution in per cent	Number of schools	Distribution in per cent
Less than 50	0	0	7	7.45
51-100	8	8.51	26	27.66
101-150	18	19.15	23	24.47
151-200	17	18.09	18	19.15
201-300	12	12.77	9	9.57
301-400	9	9.57	2	2.13
401-500	7	7.45	5	5.32
501-600	8	8.51	1	1.06
601-700	6	6.38	1	1.06
701-800	3	3.19	0	
Over 800	6	6.38	2	2.13
Totals	94	100.00	94	100.00

TABLE II

PRESENT AND FIRST YEAR ENROLLMENT INFORMATION IN AREA VOCATIONAL SCHOOLS IN STATES SURVEYED

Enrollment distribution	1966 Enrollment	In First Year of Operation Enrollment
Mean	411	192
Median	299	121
Largest	2300	1387
Smallest	58	16

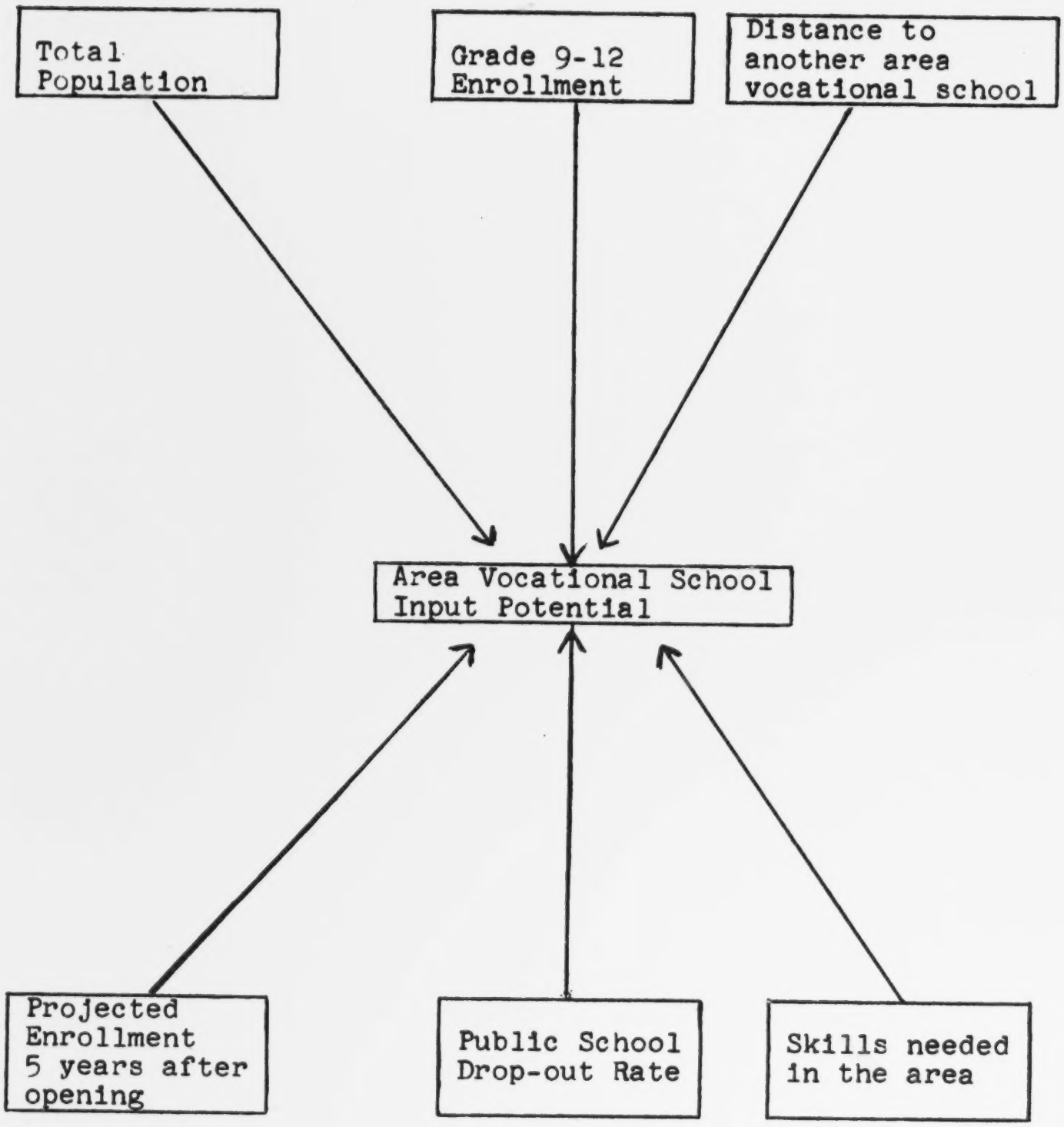

Total Population
Grade 9-12 Enrollment
Distance to another area vocational school
Area Vocational School Input Potential
Projected Enrollment 5 years after opening
Public School Drop-out Rate
Skills needed in the area

FIGURE 2

FACTORS INFLUENCING AREA VOCATIONAL SCHOOL INPUT

TABLE III

PRESENT AND FIRST YEAR TOTAL POPULATION WITHIN THE AREA VOCATIONAL SCHOOL AREA

Population distribution	1966 Population	In First Year of Operation Population
Mean	162,256	165,403
Median	117,368	129,500
Largest	550,000	504,963
Smallest	4,238	3,485

vocational school is located was 4,238, and the largest was 550,000. The mean population of 162,256 was somewhat high as a measure of central tendency because of the effect of a relatively few large areas.

The study revealed that 0.30 per cent of the present total population was enrolled in area vocational schools while, in the first year of operation, 0.14 per cent were enrolled. Although area vocational school enrollment appears to be a function of total population as evidenced by a correlation coefficient of 0.87, there were notable exceptions. For example, 0.04 per cent of one district with a large population were enrolled in area vocational schools while 4.5 per cent of a much smaller area were so enrolled. The coefficient of correlation of area vocational school enrollment in relation to total population the first year of operation was 0.82

The data in Table IV show that two areas were supported by an enrollment in grades nine through twelve of less than 2,000 students. In the first year of operation, twenty-five area vocational schools were supported by an enrollment of less than 2,000 in grades nine through twelve. The mean nine through twelve enrollment was 6,427 in 1966 and 6,186 during the first year of operation. Thirty-six of the schools surveyed had projected the nine through twelve enrollment five years after the beginning of their area vocational school. The mean enrollment thus projected was 8,925 students.

The mean distance of the area vocational schools surveyed from the nearest similar institution was sixty-one miles in 1966 and seventy-five miles the first year of operation. A personal interview by the investigator with each of the state directors of vocational education and approximately twenty per cent of the chief administrative officers

TABLE IV

GRADES 9-12 ENROLLMENTS IN HIGH SCHOOLS
WITHIN AREA VOCATIONAL SCHOOL DISTRICTS
IN 1966 AND IN THE FIRST YEAR OF OPERATION

School enrollment	1966		First Year of Operation	
	Number of schools	Per cent of total	Number of schools	Per cent of total
Less than 2000	2	2.127	25	26.595
2001-2500	7	7.446	2	2.127
2501-3000	7	7.446	3	3.192
3001-3500	8	8.511	8	8.511
3501-4000	7	7.446	8	8.511
4001-4500	8	8.511	8	8.511
4501-5000	3	3.192	2	2.128
5001-5500	6	6.382	5	5.319
5501-6000	3	3.192	1	1.064
6001-6500	2	2.127	0	-
6501-7000	3	3.192	2	2.127
7001-7500	5	5.319	5	5.319
7501-8000	3	3.192	3	3.192
8001-8500	4	4.255	2	2.127
8501-9000	4	4.255	3	3.192
9001-9500	1	1.064	0	-
9501-10000	21	22.343	17	18.085
Totals	94	100.00	94	100.00

of the schools surveyed revealed that distance between area vocational schools had little adverse effect on enrollment. At least one-half of the persons interviewed related instances in which nearby schools had mutually benefitted from the programs of the other school.

The data in Table V are relevant both to the input potential of area vocational schools and to the second major factor of the model--market for the area vocational school graduates. These data show the greatest demand was for clerical and sales personnel, service personnel, and workers in machine trades.

The data in Table VI show the percentage of area vocational schools offering instruction in the same classification of skills. Shown also are the relationships between skill need in the area as reflected by the job opportunities available and vocational programs offered. Additionally, these data show that even though area vocational school offerings are related to job opportunities, as far greater need exists than is being trained. For example, ninety-eight per cent of the areas reported job opportunities in the clerical and sales skills and only eighty-seven per cent of the schools were offering these kinds of courses. A more dramatic discrepancy is in the service skills. Ninety-four per cent of the areas reported job opportunities in these skills but only forty-seven per cent of the area vocational schools were offering courses to satisfy this demand.

The effect of public school dropout rate on area vocational school enrollment is an extremely difficult factor to quantify. The median high school dropout rate for fifty states and the District of

TABLE V

JOB OPORTUNITIES WITHIN THE VOCATIONAL SCHOOL AREA IN 1966 AND IN THE FIRST YEAR OF OPERATION

Occupational area	Percentage of Vocational School Areas in Which Job Opportunities Exist	
	1966	First year of operation
Professional, Technical, Managerial	85	77
Clerical and Sales	98	97
Service	94	94
Farming, Fishing, Forestry	83	81
Processing	75	72
Machine Trades	91	88
Bench Work	50	50
Structural Work	64	64
Miscellaneous	13	13

TABLE VI

PROGRAMS OFFERED BY AREA VOCATIONAL SCHOOLS IN 1966 AND IN THE FIRST YEAR OF OPERATION

Occupational area	Percentage of Schools Offering Programs in Major Occupational Areas in 1966	Percentage of Schools Offering Programs in Major Occupational Areas in the First Year of Operation
Professional, Technical, Managerial	45	27
Clerical and Sales	87	65
Service	47	32
Farming, Fishery, Forestry	49	30
Processing	18	10
Machine Trades	90	90
Bench Work	21	21
Structural Work	40	34
Miscellaneous	40	34

Columbia was 29.4 per cent in 1963.[30] The high school dropout rate in New Mexico during this same period was 37.8 per cent.[31] The high school dropout rate of the states surveyed paralleled the national median. Since the median high school dropout rate is assumed to have a common effect, the degree to which an area exceeds or falls below the median is considered to be a factor influencing enrollment in vocational program.

Figure 3 provides a graphic illustration of the factors contributing to the second major characteristic of the model--market for area vocational school graduates.

The data in Table V indicated that clerical and sales jobs were available in ninety-eight per cent of the areas; service jobs were available in ninety-four per cent of the areas; and machine trades jobs were available in some ninety-one per cent of the areas. The occupational skills with least opportunities in the states surveyed were bench work and structural. Even these skills were needed in over-one-half of the areas studied, however.

The schools surveyed indicated without exception that their problem was not one of placing their graduates, but rather one of satisfying the demand for skilled tradesmen. These schools reported that sixty-three per cent of their graduates were working in the immediate geographic proximity, and thirty-one per cent were employed outside

---

[30] National Education Association, Research Division, Rankings of the States, 1963, Research Report 1963-R1. (Washington: The National Education Association, 1963), p. 47.

[31] Ibid.

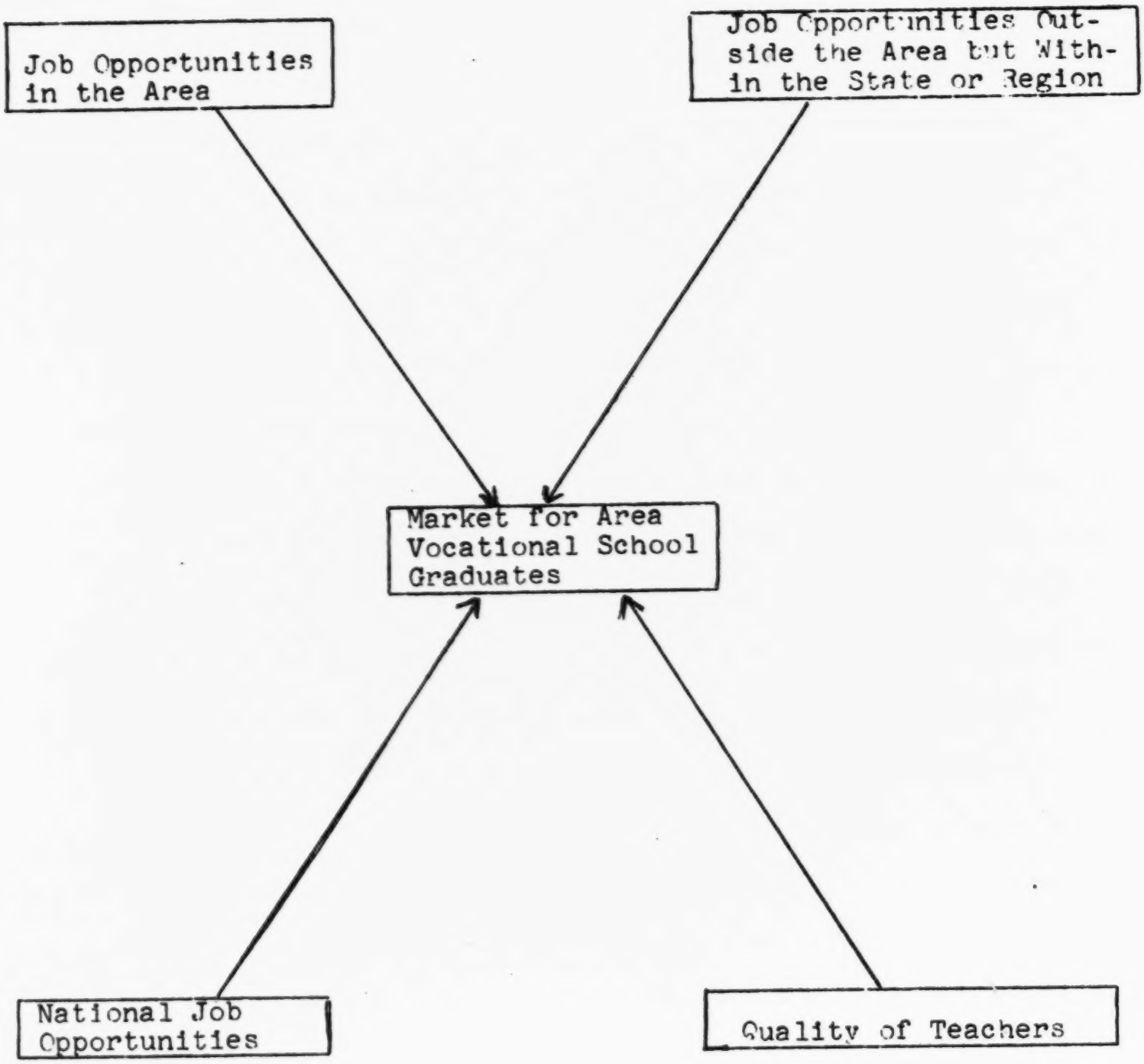

Job Opportunities in the Area
Job Opportunities Outside the Area but Within the State or Region
Market for Area Vocational School Graduates
National Job Opportunities
Quality of Teachers

FIGURE 3

FACTORS INFLUENCING MARKET FOR AREA VOCATIONAL SCHOOL GRADUATES

the immediate geographic proximity. Only six per cent of the graduates were unemployed and this could be attributed in large part to females who had graduated from an area vocational school, married, and were raising a family.

Eighteen per cent of the first year classes and fifteen per cent of the 1966 classes in area vocational schools acquired sufficient skill to satisfy employers before completing of the prescribed courses and dropped out of the area vocational school to accept jobs.

The experience of area vocational school teachers appears to influence the placement of graduates of such schools, according to the personal responses of the persons interviewed. In the first place, all area vocational schools had adopted strict policies prescribing an acceptable level of practitioner experience for their teachers. Additionally, some schools, notably those associated with community colleges and junior colleges, required various levels of academic preparation.

Secondly, many employers consider the occupational background of the teachers in the schools when considering graduates from their courses for employemnt. As a result many area vocational schools dropped academic requirements completely from their preparation standards. All area vocational schools, however, were conducting in-service programs to upgrade the quality of instruction.

The levels of preparation of currently employed personnel are shown in Table VII. As shown by these data there were 1,733 teachers in the area vocational schools surveyed. Of this number only nine, or 0.52 per cent, had earned a doctor's degree. Approximately one-fourth had earned a master's degree, and one-fourth had earned a bachelor's

TABLE VII

LEVEL OF PREPARATION FOR AREA VOCATIONAL SCHOOL TEACHERS

Level of preparation	Number of teachers	Percentage of teachers
Doctorate	9	0.52
Master's Degree	455	26.26
Bachelor's Degree	477	27.52
College Education but less than a Bachelor's Degree	451	26.03
Trade School	199	11.48
Union or Apprentice Training	95	5.48
Other	47	2.71
Totals	1733	100.00

degree. Just under one-half of the area vocational school teachers had earned no degree, although approximately one-fourth had earned at least some college credit, primarily through the in-service program.

A comparison of these data with total enrollments indicate that, in the first year of operation, the student-teacher ratio was 16.6 students per teacher. In 1966 the student-teacher ratio was 21.73 students per teacher.

The components of the third major characteristic, financial support, are shown in Figure 4.

There seem to be three dimensions to the financing of area vocational schools-operational costs, capital outlay costs, and student aid costs. Student aid costs, however, have not been considered in the location and establishment of area vocational schools because eighty-three per cent of the students currently attending area vocational schools are doing so without outside aid. Of the approximately 6,000 students who were receiving outside aid, nearly one-half were participating in work-study programs. Data in Table VIII summarize the sources of aid for those students aided in 1966 and in the first year of operation.

The cost of operations, excluding capital outlay, is shown in Table IX. The mean cost per student for 1965-66, 1,080 clock hours of instruction, was $968. The median cost was $1,000 while the most any school spent was $1,267. One school, operating under the administration of a high school, reported a per pupil cost of $396.

The capital outlay required for area vocational schools averages $2,310.85 per student currently enrolled in the school. The capitalized

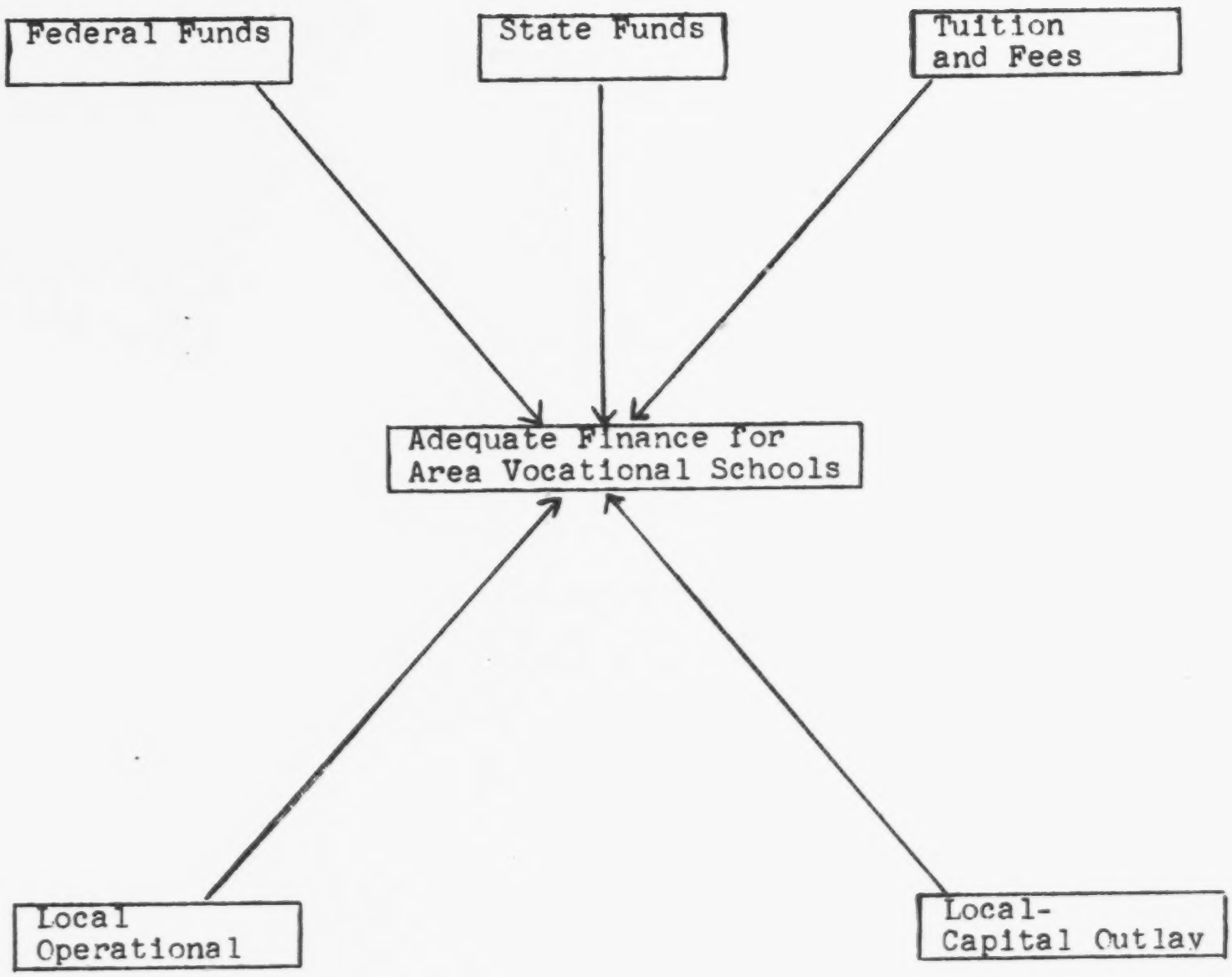


FIGURE 4

FACTORS INFLUENCING ADEQUATE FINANCING OF AREA VOCATIONAL SCHOOLS

TABLE VIII

SOURCES OF STUDENT AID FOR STUDENTS RECEIVING FINANCIAL AID

	Percentage of Students	
Source of aid	1966	First year of operation
Federal Scholarships	13	19
State Scholarships	19	35
Local Aid	10	10
Loans	5	4
Work-Study	42	25
Other	11	7

TABLE IX

AREA VOCATIONAL SCHOOL COST PER STUDENT FOR OPERATIONS FOR TWELVE MONTHS IN SCHOOLS SURVEYED

Distribution of cost	Cost
Mean	$ 968.00
Median	$1000.00
Largest	$1267.00
Smallest	$ 396.00

values of area vocational schools investigated are shown in Table X. These data show that the capitalized value of the largest area vocational school was $4,000,000 while one high school attributed $38,205 of its capital outlay to its area vocational school. The mean cost per area vocational school for capital outlay purposes was $1,247,706.

Funds for financing the operational and capital outlay costs of area vocational schools typically were obtained from four sources--local, state, federal, and tuition--although no tuition or fees were used for capital outlay purposes.

The relative proportion of these funds varied widely. Generally, in states where area vocational schools operated on a statewide basis, funds were obtained from primarily two sources--state and federal. In most states where area vocational schools were operated by local boards the primary sources of funds were either local and federal or local, state, and federal. Some tuition was charged by 60.5 per cent of the schools surveyed during their first year of operation. Since beginning operation, one school added a tuition charge. Data in Table XI show the percentages of revenue from each source in the first year of operation and in 1966.

From the data it may be seen that the pattern of financing area vocational schools has remained relatively unchanged. The only noticeable change is that the amount of tuition charges are slightly lower. Of the schools charging tuition, the average annual tuition charged was $90.00 in 1965-66.

Assessed valuations were of little concern to the area vocational schools which were supported primarily from federal funds and state

TABLE X

CAPITALIZED VALUE OF AREA VOCATIONAL SCHOOLS IN STATES SURVEYED

Distribution of values	Capitalized value
Mean	$1,247.706.00
Median	$1,068,549.00
Largest	$4,000,000.00
Smallest	$ 38,205.00

TABLE XI

PERCENTAGES OF REVENUE FOR AREA VOCATIONAL SCHOOLS BY SOURCE

	Per cent of Revenue	
Source	1966	First year of operation
Tuition	10.73	11.52
Local Levy	13.91	15.16
State Appropriations	38.89	37.02
Federal Allocations	36.41	36.21
Other	0.06	0.09
Total	100.00	100.00

appropriations, and very few of these valuations were known by vocational school administrators. Where the area vocational schools depended upon a local levy for a sizeable amount of their revenue, the assessed valuation of the area became a critical issue. The mean, median, largest, and smallest assessed property valuations in the states surveyed are shown in Table XII.

The median assessed valuation of an area vocational school district was $188,255,907. Thus, if an area vocational school with median enrollment, 299 students, incurred a median operational cost per student, and received the median amount of revenue from federal sources, slightly over a one mill levy would be required for operational costs. If mean values were used, slightly less than a one mill levy would be required for operational costs.

IV. SUMMARY

In spite of all the problems and frustration facing vocational education, after the chaff has been winnowed from the grain, the following points may very well characterize vocational education programs at the thirteenth and fourteenth years by 1980:

a) The definition of vocational education will describe three levels of instruction: 1) pre-vocational instruction which will be included primarily in grades 7-12 or as special introductory courses at the thirteenth year; 2) manipulative-skill instruction which will include skill training with a minimum amount of instruction in theory; and 3) sub-professional, technical instruction which will include varying amounts of instruction in theory as well as practical application;

TABLE XII

PRESENT ASSESSED VALUATION OF AREA VOCATIONAL SCHOOL DISTRICTS

Distribution of valuations	Assessed valuation
Mean	$232,866,007.00
Median	$188,255,907.00
Largest	$847,420,000.00
Smallest	$ 2,428,248.00

b) Pre-vocational education will be integrated into the curriculum of one or more secondary schools of all systems just as English, mathematics, and science are now considered integral parts of all curricula;

c) Area vocational schools offering instruction in the manipulative skill and sub-professional levels will be established so that at least ninety-five per cent of the population will reside within seventy-five miles of the school. Regular bus routes will be established between the school and the most populous areas;

d) State-or university-operated in-service training programs will be developed to up-grade instructors' competence in technical as well as instructional areas;

e) The scope of curricular offerings will be broader than most present programs. The concept that an area vocational school offers primarily, if not only, training in those skills in demand in the immediate geographic area will yield, because of the mobility of the labor force, to the concept that the nation is the employment area; and

f) Vocational programs will be financed at a much higher level with federal funds. This will become necessary because, first, the costs of vocational education are greater than general education; and second, the consideration that the nation is the market for graduates discourages a high level of local support.

By 1980 vocational education will have become so integrated into the New Mexico, as well as the national, educational program, that references to this phase of education will no longer be framed

in guarded or defensive terms. Pre-vocational, vocational, and post-vocational or continuing education will have become a dignified, accepted phase of the educational program.

V. BIBLIOGRAPHY

A. BOOKS

Barlow, Melvin L. "A Platform for Vocational Education in the Future," Vocational Education. 64th Yearbook, Part I, National Society for the Study of Education. Chicago: University of Chicago Press, 1965.

Halpin, Andrew W. (ed.). Administrative Theory in Education. Chicago: Midwest Administrative Center, University of Chicago, 1958.

Halpin, Andrew W. Theory and Research in Administration. New York: The Macmillan Company, 1966.

Parsons, Talcott (ed.). Theories in Society: Foundations of Modern Sociological Theory. Glencoe, Illinois: The Free Press, 1961.

B. PUBLICATIONS OF THE GOVERNMENT, LEARNED SOCIETIES, AND OTHER ORGANIZATIONS

Division of Vocational and Technical Education, Bureau of Adult and Vocational Education, United States Department of Health Education, and Welfare. Summary Report of Vocational-Technical Program Development by States. Washington: Government Printing Office, 1965.

Georgia State Department of Education. Criteria for Approval of Locations for Area Vocational-Technical Schools. Atlanta: State Department of Education, undated.

Hughes, Loyd R. The Area Vocational School: A Summary Report. Resident Instruction Series Number 8, Department of Agricultural and Extension Education. University Park: New Mexico State University, 1966.

McComas, James D., and Darrell S. Willey. Occupational Needs for Vocational and Technical Education. Bureau of Educational Research, Park: New Mexico State University, 1966.

National Education Association, Research Division. Rankings of the States, 1963. Washington: The Association, 1963.

State Board for Vocational Education. Area Schools. Denver: State Department of Vocational Education, 1966.

State Board for Vocational Education. Area Vocational Education Schools in Idaho. Boise: State Department of Vocational Education, undated.

State Board for Vocational Education. Area Vocational-Technical Schools: A New Program Concept for Oklahoma. Stillwater: State Department of Vocational Education, undated.

State Board for Vocational Education. Criteria for Establishment of District Vocational-Technical and Adult Education. Minneapolis: State Department of Vocational Education, 1966.

State Board for Vocational Education. New Mexico State Plan for the Administration of Vocational Education Under the Federal Education Acts. Santa Fe: State Department of Vocational Education, 1964.

State Board for Vocational Education. Policies on Relationships in Vocational Education Between Post-High School Educational Institutions and School Districts in Utah. Salt Lake City: State Department of Vocational Education, 1965.

State Board for Vocational Education. Statement of General Policies and Principles. Topeka, Kansas: State Department of Vocational Education, 1963.

State Board of Education. Oregon Community Colleges: Annual Report. Salem: State Department of Education, 1965.

Thompson, James H. Methods of Plant Site Selection Available to Small Manufacturing Firms. Bureau of Business Research Bulletin Series 62, Number 3-3, Morgantown: West Virginia University, 1961.

United States Department of Health, Education, and Welfare, Office of Education. Vocational Education in the Next Decade. Washington Government Printing Office, 1961.

United States Office of Education. A Review of Activities in Federally Aided Programs, Fiscal Year 1963. Washington: Government Printing Office, 1964.

C. PERIODICALS AND OTHERS

Getzels, Jacob W., and Egon G. Guba. "Social Behavior and the Administrative Process," The School Review, Volume 65, Winter, 1957. pp. 423-442.

Harris, Norman C. "Redoubled Efforts and Dimly Seen Goals, Phi Delta Kappan, Volume 64, April, 1965, pp. 360-365.

LeVan, F. E. "Hardboiled Economics Guide DuPont in the Selection of Sites for Plants." Industrial Development, December, 1959.

"States Expand Area Schools and Programs," American Vocational Journal, Volume 38, September, 1963, pp. 9-15.

Burns, Richard L. "Factors Governing the Establishment and Operation of Area Vocational-Technical Schools and Programs in the United States with Application to Missouri." Unpublished Doctor's Thesis, The University of Missouri, Columbia, 1964.

Hall, George L. The Management Guide. Published by the Standard Oil Company of California, 1956.